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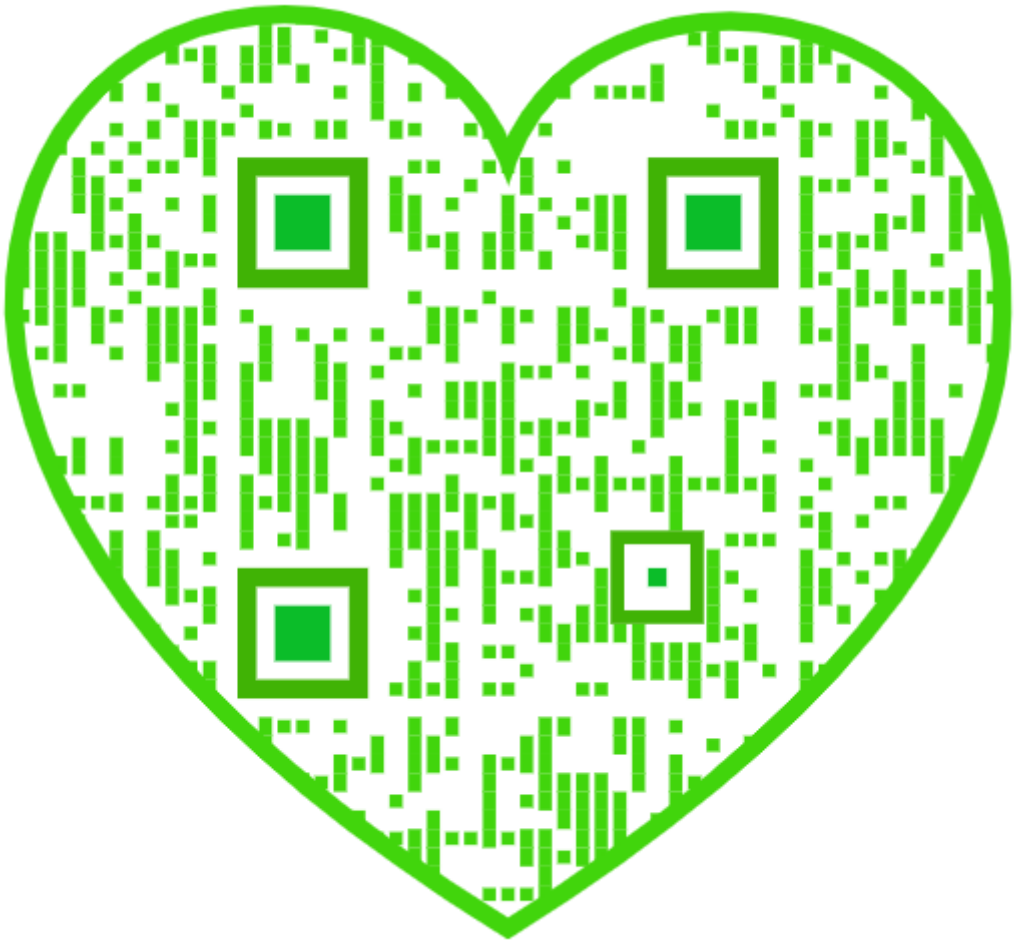

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OF ALL KINDS;

TO MANUFACTURE AND APPLY

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INTRODUCTION.

THERE is no trade or art that is so dependent on practice for perfection as Painting. Any person with a fair eye for color and a moderately steady hand can, by reasonable application, become a good painter. Not that the art of painting is so very simple; but that the learner can go on *by degrees* toward perfection. Every time he handles a brush or mixes a color he is on the highway of advancement, and his work, whether its excellences or its defects, are palpably before him. This being the case it is evident that the best way to become a painter is—to paint.

The object of this treatise is to give all the information that can be given by books—to clearly explain the nature and properties of the various paints, and show the simplest manner of thinning or thickening them, so as to do the best work in the shortest time and in the least expensive manner.

To enable the painter to work to most advantage

we will describe the best kinds of brushes and other implements that he will need.

As marbling, graining, gilding and varnishing are more or less necessary adjuncts to painting, we shall carefully describe the best modes of preparing the various articles to be used; as well as explain the manner of using them so as to produce the most satisfactory work both in durability and appearance.

UNHEALTHINESS OF THE PAINTING BUSINESS.

It is much to be deplored that the always useful and generally intelligent men who make painting a business are too often seriously injured in health by the pernicious effects of white lead and a few other articles in common use. The grinding of colors containing arsenic, and flatting, which is accompanied by a quick evaporation of turpentine, are more or less hurtful. But white lead is the great destroyer, and its extensive use makes painting one of the most unhealthy of trades, if steadily worked at. The usual way in which white lead shows its bad effects is by producing the complaint known as PAINTER'S COLIC.

Writing in relation to this disease, Sir John Sinclair has estimated that one-third of all the men engaged in white lead works die annually. Medical science should exert itself to produce mitigation if not pre-

vention of this cruel malady. Sickness is bad enough in all cases, but it seems doubly bad when the hand becomes paralyzed the sooner, the more industriously it is used. A small dose of opium is recommended in cases where the pain is acute; castor oil produces a more lasting beneficial effect. The very first symptoms of paralysis should be met by judicious medical treatment. Sometimes painters lose the power of their wrists; occasioned, it is presumed, in part by the fumes of white lead, aided by handling paint pots, brushes, etc., which brings the poison through the pores into the parts with which it comes in contact. Dr. Pemberton, an eminent specialist in such complaints, describes a case which we here reproduce in hopes it may prove useful to some unfortunate similarly affected. The doctor states that a man was brought to the hospital whose wrists were palsied through the effects of lead; the hands hanging down from the wrists in an entirely useless manner. Dr. P. placed the arm, wrist and hand into a kind of trough, all quite straight. These were securely bandaged. In a month's time the man was able to raise a weight of eight ounces to a level with his fore-arm; in a little more than another month his arm was perfectly restored. His left arm, which had been neglected, continued useless. The inhalation of turpentine, especially in close rooms, often produces

sickness of the stomach. Verdigris, arsenic and mercury, while injurious to the system, are rarely employed in quantities likely to injure. The painter's best safeguards against the evils incident to his business are sobriety and cleanliness. Liquor has an unquestioned tendency to aggravate all complaints incidental to painting. The painter should keep the handles of his pencils and brushes perfectly clean, he should often give himself a thorough washing to remove all particles of lead that might penetrate the pores of the skin, and should inhale fresh air copiously.

HOUSE-PAINTING PLAINLY TAUGHT.

As many large firms exist, with the requisite capital to buy the crude materials at the lowest prices, and having extensive manufactories to grind the colors thoroughly, it will not pay the practical painter, but in some exceptional cases, to grind and mix his pigments in oil. We shall therefore limit ourselves to giving facts that will necessarily prove useful, and not weary the reader with the jargon of technical or learned names for things often well known by simple words.

WHITES.

WHITE LEAD.

This material is generally the first applied in all cases, as it is used to underlie most other colors, and is absolutely necessary in blending nearly every hue or shade. One proof of its purity is, that it draws out almost like hot candy, whereas, if adulterated with barytes or whiting, it breaks short off, showing a *grainy* look. It would be invidious for us to say what brand of white lead is the best; we can only

advise you to buy of colorists of reputation,—for much white paint is anything but *white* after a few weeks' exposure to wind and weather.

ZINC WHITE.

A very useful pigment where body is not so much an object as external appearance. Over white lead it imparts a nice smooth finish. The article called China Gloss is made by mixing zinc white with colorless varnish.

OTHER WHITES.

Spanish white, Bougival white, and white of bismuth are some of the other articles used instead of white lead; but as they are inferior in many respects we only mention them in order to warn against their use.

BLACKS.

IVORY BLACK.

The most beautiful of all the Blacks is this article, made by burning ivory shavings to a black coal. This color is, however, very expensive, and is only used on the finest kind of work.

LAMP BLACK.

This is simply soot collected from burning resinous woods, wicks in oil, etc. It is used to tone down colors that are too glaring. It is plentiful and consequently cheap. It has so fine a body, entirely

unmarred by grittiness, that it scarcely requires grinding, and mixed with either oil, turpentine or varnish, works smoothly, and is very lasting. In mixing the dry article, it is best always to first wet the mass thoroughly with turpentine, which *cuts* or dissolves the small *lumps*—and then reduce with oil to the proper consistency.

CHARCOAL BLACKS

Are of many kinds, but are in no way superior to the two just described. They all work well and have a natural lustre without any varnish being used.

BLUES.

PRUSSIAN BLUE.

This accidental discovery of a Prussian chemist is the most powerful coloring matter known. It is unfit to mix with colors containing any of the alkalies, as it is greatly altered by any of them. It is very dark, but can be brightened by mixture with white, and a very little lake. It is also sometimes used to impart a rich blue-black color to black. A very small quantity produces this result.

ULTRAMARINE

Has no equal as a paint. It is soft and brilliant. It can be bought for forty cents per pound, but this is

not the best quality It goes much further if mixed moderately with white.

SMALT OR ENAMEL BLUE.

This is a very handsome color, but has to be used in a particular way, as oil imparts a dark cast to it.

GREENS.

The shades of this brilliant pigment are almost innumerable. Among the most notable are

VERDIGRIS, SCHEELE'S GREEN, BRUNSWICK GREEN, AND LAKE.

There is no end to the different shades of green that can be obtained by blending in yellows to lighten, and Prussian blue to darken.

YELLOWS.

CHROME YELLOW

Takes its name from the fact that it imparts its color to everything with which it combines. It is sometimes called chromate of lead. It can readily be changed into different hues from a deep orange to a light lemon. It can be bought for about thirty cents a pound.

NAPLES YELLOW

Is a very handsome color, but there are some ob-

jections to its general use. It must be kept from contact with Bath stone or steel, as either has a tendency to turn it green.

YELLOW OCHRE

Is a good, strong, lasting color, particularly fitted for common work, such as barns, fences, etc., as it resists weather, and looks bright.

REDS.

VERMILION.

This is the most brilliant of scarlet. There are various kinds, but the genuine article looks better, grinds as fine as oil, works smooth, and spreads well. There are two shades, the deep red and the light. The light is best adapted for ornamental work. The Chinese vermilion is the best, but it is almost impossible to procure it pure. The Chinese is sold for about $1.25 per pound; the English at about the same rate; while the American, a good article for ordinary work, can be bought for $2.10 the 6-lb. can. California vermilion is worth $1.50 per 6-lb. can.

RED LEAD.

This is quite light in color. It binds very fast and firm; drying quickly.

CARMINE.

A very beautiful color; indeed, the superfine quality, "Madame Cenete's," is almost too bright for

the eye to endure. It is an expensive article and, therefore, cannot be used in any ordinary work.

LAKE.

There are two kinds. The most expensive, made from cochineal; the other made from madder. Like carmine they are both too costly to be used in common work. Some drops of carriage varnish add a gloss to these colors.

VENETIAN RED, OR RED OCHRE.

A strong, coarse red, of deep but not brilliant color. It is extensively used in mixing. It answers very well for barns, out houses, etc. As it is quite cheap it can be used liberally to give a good coat. An excellent article can be bought for four cents per pound.

BROWNS.

UMBER, BURNT AND RAW,

Is the only simple brown known. Vandyke brown is an exceedingly useful color. It is much used in graining dark, rich woods.

Spanish brown has its admirers, but it is rather dull.

The usual way with painters is, however, to make a brown of any desired shade, by an admixture of black and red.

MIXED COLORS.

The following combinations of colors are those that Painters most generally make. But of course there can be thousands of shades made by mixing two or more colors in different proportions.

BUFF.

White lead, and yellow ochre.

BRICK COLOR.

Red, yellow ochre, white.

CARNATION.

White, and lake.

GOLD COLOR.

There are many ways of making this color. Yellow, black, and blue; lamp-black, verdigris, and yellow.

CHESTNUT COLOR.

Black, and red ochre, for dark; a little yellow ochre added for light chestnut.

CHOCOLATE COLOR.

Spanish brown, and lampblack. A little litharge, and red lead, does away with the greasiness of the lampblack.

DARK LEAD COLOR.

White, and black—tempered with a slight tinge of blue.

FLAXEN GRAY.

Prussian blue, white lead, and a little lake.

FAWN COLOR.

White lead, vermilion, and ochre.

FLESH COLOR.

Lake, white lead, and vermilion.

LEAD COLOR.

White, and dark blue, either Prussian or ultramarine.

LIGHT WILLOW-GREEN.

White, mixed with verdigris.

LIGHT GRAY.

Lampblack, and white lead. Varying proportions until the right color is obtained.

ORANGE COLOR.

Red lead, and yellow ochre.

OAK WOOD COLOR.

One-eighth umber, ditto yellow ochre, and three-fourths white lead.

PURPLE.

Violet color, and dark red.

SILVER GRAY.

Blue, white lead, and the least bit of black.

VIOLET.

Black, blue, vermilion, and a very small particle of white.

STONE COLOR.

White lead with a little red ochre and yellow ochre, and a slight tinge of lampblack.

WHITING, GLUE, Etc.

WHITING.

A kind of chalk, much used for kalsomining walls. Useless for oil painting (except as a filling coat for old or rough surfaces) as it turns a dull *brown* when mixed.

GLUE.

The light brown is best. It should be clear. Break in pieces, and soak in water, when it will soften. The vessel holding the glue must be put into another containing water, the object being to prevent the direct heat from reaching the glue. When fully dissolved, and gently boiled it is ready. Glue is worth about twenty-five cents, more or less, according to quality.

PUMICE STONE

Is used in the lump to smooth rough painted surfaces. When reduced to powder it is used to take off gloss from varnished work. A woolen cloth and water is used with it.

This article should be free from gritty grains, or it will do more injury than good. You can quickly detect any grit by taking a little between the teeth. It should always be washed before using. The way to effect this is to stir it in a good quantity of water. Let it remain tranquil for a minute, then pour the water into an earthen vessel, which must be glazed; the powder which is then precipitated will be smooth

and fine. Wash the remainder and the whole of the finer parts may be separated from the grit.

BENZINE

Sometimes takes the place of turpentine; but is only fit to use on the most inferior work.

OILS.

Linseed oil is incomparably the best. The raw is preferred for first coats, as being more fluid it more easily enters the pores of the wood.

The oil of linseed and of the different nuts have so much of a fatty quality that if used in their pure state, it would be a very long time before they would be perfectly dry. To obviate this defect it is necessary to impart to the oil itself a drying quality, or to mix with the paint some article that possesses such a quality. A proper drying quality is given to linseed oil by boiling 32 parts of oil with 12 parts of oxide of lead (litharge) and three parts of white vitriol. After boiling it is known as boiled oil. Where cloths or other articles are to be painted, that require quick drying, the proportion of litharge is doubled.

For fine work various other oils are used; such as nut oil, poppy oil, etc. They, however, are too costly to use where any great quantity is needed. The longer oil is kept, the better it gets, provided it is kept in a close can or vessel.

SPIRITS OF TURPENTINE.

Dangerous to have about as it ignites almost as quick as gunpowder. It is also detrimental to

health; entering readily into the pores as well as by inhalation. Its ordinary price is about 75 cents per gallon. It is used as a drying medium in paint.

VARNISHES.

There are very many different kinds of varnishes. Some valuable for some special quality, some for others.

CARRIAGE RUBBING VARNISH.

This almost indispensable article is used to make a thoroughly level surface on paint, so that it will receive a finer varnish. In twelve hours it is thoroughly dry. It is, however, well to give it more time to harden before smoothing with pumice stone.

HARD DRYING BODY VARNISH.

This is a good article for going over a surface already smooth. It is particularly suitable for indoor work.

WEARING BODY VARNISH.

Worked with facility, and remains soft long enough to give the painter time to thoroughly finish his job.

NOTE.—Almost every kind of varnish is now made by the colorists, and is more uniform in color and consistence, as well as lower in price, than any home-made article. We append some recipes, however, so that any one can make his own if he chooses.

JAPAN VARNISH.

Shellac (gum), two pounds; oil, one-half gallon; red lead, one-half pound; litharge, one-half pound; umber, one-eighth pound. Liquify the gum in enough of oil, and then slowly add to it the other ingredients while boiling. When it is stringy it is done.

COPAL VARNISH.

Copal (gum), four pounds; linseed oil, two gallons; turpentine, one and one-half gallons; sugar of lead, one-quarter pound.

ASPHALTUM VARNISH

Has its uses in shading gold leaf—it being quite transparent. It is sometimes used for staining woods. An excellent stain for light colored woods, such as pine or white wood, in imitation of black. walnut, may be made by reducing asphaltum varnish with spirits of turpentine, and applying with a soft brush.

Every kind of varnish can be rendered of a desired color by adding any of the transparent colors.

Oil is used to thin oil varnishes. Alcohol is used for the same purpose with distemper varnishes.

COMMON SIZE.

Painters mostly use a size for ordinary work that is made by boiling bits of parchment in water, together with the fins of fish, and reducing the solution to a suitable consistency. This is in no way different from a solution of glue, but that it has a variety of ingredients, and is really not so strong.

ABOUT MIXING PAINT.

(*a*) Paint should have a good body, *i. e.*, covering quality;

(*b*) It should be sufficiently fluid to work easily;

(*c*) It should possess the quality of drying well;

(*d*) It should possess the power of adhering to the thing painted;

It should retain its color for a good length of time.

(*a*) The first quality can only be fully arrived at by the skillful management of the painter, as some pigments are very solid or opaque, others almost as transparent as glass.

(*b*) Add your dryers or other liquids very gradually, for there is a point at which too much fluidity will make the paint unworkable.

(*c*) Some colors require hardly any dryers, as they become dry very quickly; of such are the different leads, the umbers, and other earths.

(*a*) It is of the greatest importance that all paint should *stick* well. For this reason turpentine and all similar rapidly evaporating mediums should be avoided; as the moment they dry, the paint is left, almost like dust, and is easily removed. Hence it is necessary to use more or less varnish or oil, which causes the paint to adhere, when dry, as if veneered to the object.

FISH OIL,

Prepared for the purpose, is occasionally used for mixing paints for ordinary work. Its low price is its only recommendation.

OUTSIDE PAINTING.

Where paint is only to be used for painting outside work, of course no varnish can be used that would be any sufficient protection against sun and rain. In such cases it is best to crush the colors, if not already in dust, and mix to a paste with raw linseed oil. If for a dark color, add brown Japan, half a pint to a gallon of oil. Use patent dryer, in a like proportion, where a light color is used.

Where oil colors are used, the mixing should be done in this manner.

WHITE PAINT.

Remove the paint from its keg, and put it in a larger vessel; then add sufficient linseed oil to bring the mass to the consistency of cream; a very small quantity of clear Japan varnish or of patent dryer should be added; then stir thoroughly.

KNOTTING.

This is the term applied to filling up the knots in wood. If this was not done there would be large dark spots. The knotting is a mixture of red lead, litharge and spirits of turpentine. As soon as the knotting is entirely dry, the *priming*, or *first coat* of paint is put on. This having previously been reduced to a proper consistency for working by oil, add a very little turpentine. This must be laid on as smoothly and as thin as possible.

The second coat follows as soon as the priming is

entirely dry; to get the paint into proper consistency for this coat, thin with turpentine alone.

The third coat—if the work seems to require it in order to completely cover the surface—should be the same as the second. No following coat should ever be applied until the preceding one is entirely dry, or bad looking work is surely done.

When work that has been painted before is to be repainted, grease and dirt of every kind must be first carefully removed from the old paint. To effect this it should be washed with water in which a little soda has been thrown; or turpentine will have the same effect. Old work requires fewer coats than new, and the white lead should be mixed with an additional quantity of turpentine. Otherwise the treatment of new and old work is about the same. Where roughness appears on the surface of the old paint, it is well to rub it smooth with pumice stone. Sometimes it becomes necessary to burn the old paint off.

INSIDE WORK.

WHITE PAINT.

Mix your white lead with turpentine to the thickness of cream, adding to every gallon of cream, one-half pint of light-colored carriage varnish. This addition to the paint enables it to resist the action of soup-suds. This paint is for painting over an old surface.

ZINC WHITE.

This is an elegant white for a finishing coat. It is at times made to dry *flat* (that is without a *gloss*). But many prefer that the final touch should be given with China gloss.

OIL COLOR EXPOSED TO THE WEATHER.

See that your dry color is thoroughly crushed so as to be free from lumps. With turpentine mix to a stiff paste on the stone. Then put the mass in a paint mill, adding enough of Japan dryer to bring it to a fluid state. When properly ground, put in sufficient linseed oil to make it work freely.

FLAT COLOR.

This is fit for any work that is to be varnished. Make in same style as the preceding, except that the oil is left out. A small quantity of carriage varnish will keep the paint together. Use turpentine for thinning, if necessary. This paint is an instantaneous dryer.

OIL COLORS IN BOXES.

Every color is now ground in oil and can be procured from all country store-keepers. As by this method you can get just the quantity that you need, it hardly pays to grind it yourself. Turpentine or oil, with a few drops of drying oil, will enable you to get it in working order. These oil colors can be mixed with white lead in order to make any tint that

is required. The color used for tinting the mass of white lead should be quite thin, otherwise the coloring will look streaked.

PUTTY.

The following methods are generally followed for mixing putty:

PUTTY CEMENT,

Used to close joints in pipes. Equal weight of white and red lead, mixed to proper consistency with boiled oil.

WINDOW PUTTY.

A dough-like mass is mixed, of whiting and linseed oil.

WALL PUTTY.

Whiting, mixed with glue, or calcined plaster and water.

HARD WOOD PUTTY.

Very fine sawdust, color of wood, and glue.

PAINTING IN MILK.

Many persons have a constitutional objection to the smell of turpentine or oil, which is thrown off by new oil paints. To suit such persons milk is sometimes used. This paint is free from offensive odor, and looks almost as well as oil painting.

DISTEMPER PAINTING.

This differs from oil painting in the fact that in it the colors are mixed with size and water, instead of oil. Consequently, many coloring substances of chalk or clay, and, also, many vegetable colors can be used in distemper that cannot be used in oil painting. Meanwhile nearly every coloring matter used in oil painting can be used in distemper. All the coatings should be applied in a warm, not hot, state in distemper, the last excepted. In distemper painting it is absolutely needful that the ground should be entirely clean. Canvas can be cleaned by ley, wood by pearlash and water, stone or brick work by scraping. Distemper is much used inside of houses, and when nicely done has a very handsome look. It is also entirely free from the odor of turpentine and oils.

HOW TO PREPARE THE MIXTURE.

One-half pound of glue, properly dissolved, to ten pounds of dry white zinc for fine work; whiting may be substituted for common work in about like ratio. With warm water mix the white material to the consistency of cream; after the dissolved glue is added, stir all the ingredients thoroughly. In places liable to be brushed against one-third more glue may be added to prevent its being rubbed off. Apply the mixture while still warm, thinning it with warm water when required. A whitewash brush is as good

as any to use. If the mixture does not "take" or adhere well, it may be best to coat the walls with a thin covering of diluted glue. Where the painting is intended to look extra nice, it is advisable to give the space to be painted a coat of oil paint. This, however, is only necessary where there is a probability of dampness oozing out and injuring the look of the work. In distemper painting the surface to be covered should be dry. The usual way of putting on distemper colors is to pass the brush in various directions, as in oil painting; formerly they used to draw the brush always in one dircction. There is a process that gives something like the effect of stippling in engraving; it is produced by striking the work with the face of a coarse bristle brush, very lightly. It is easily tried, and if the effect justifies the extra trouble, can easily be done. A fair sized bed-room can be treated to a distemper coating for about fifty cents for material. The brushes of course not counting, as they can be used over and over again for similar work. A few cents additional will pay for any primitive color, if it should be wished to give the walls a tint.

FOR BARNS AND OTHER OUT BUILDINGS.

A very good cheap paint for outside work is thus made: Two parts, in bulk, of water lime (better known as cement), ground fine, one part, in do., of

white lead ground in oil. To these add enough of boiled linseed oil to make a mass that will pass through a paint mill. Afterwards add enough of oil to make it work readily with an ordinary paint brush. It is a very cheap paint, and lasts a long time. The color stores all have a mineral paint for outside use, which is claimed to be fire proof. It comes in all desirable colors. Mixed up with oil, it is an excellent paint for barns, fences, etc. It is sold in barrels containing three-hundred pounds in a dry state, and can be bought for two and a half cents a pound, and can also be obtained, ground in oil, for about five cents a pound. Another outside paint is made in this way: take one part of white lead, ten parts cement; mix with crude petroleum to a proper consistency for application. The article known to the trade as "bright varnish" can be used instead of the petroleum.

PAINT FOR IRON WORK EXPOSED TO THE WEATHER.

One ounce each of chrome yellow and lampblack, two pounds of chrome green, mixed with boiled oil, to which add a small quantity of Japan dryer and a very little fine bronze green. Have the iron work rubbed till quite clean. Give a thick coating. If it is desired to give the work a very handsome appear-

ance apply a little gold bronze to projecting points. A cheap substitute is Prince's Metallic Paint, costing in a dry state about two or three cents a pound, mixed to the proper consistency with boiled linseed oil.

WHITEWASH.

ORDINARY AND SUPERIOR.

The usual way of making whitewash for walls, etc., is to add to fresh slaked lime and water a solution of starch, a few drops of indigo, or any soluble blueing, and a very little salt. The starch must be boiled to a thin gruel-like fluid, to which the salt is to be added, during the boiling. Pour this mixture into the lime and water before the heat of the slaking has ceased. Then add enough blueing to remove any yellowish tinge, being careful not to make the blue too strong. Bear in mind that *green* must not be used with lime, as it spoils the color; it also has the effect of making whitewash peel off and crack.

In cases where walls have been badly discolored by smoke, a good way to render them a clean white is to give them a preliminary coat consisting of a solution of sal soda in water (about half a pound of sal soda to a gallon of water). This removes the greasy element, after which the wall can be whitewashed successfully.

VERY SUPERIOR WHITEWASH.

To make a whitewash which can scarcely be told from paint, proceed as follows: One-half bushel clean unslaked lime is to be slaked with boiling water; keep in the steam during the slaking. Strain through a fine sieve, add a peck of salt dissolved in warm water, three pounds of ground rice, boiled to a thin paste, stir in boiling hot, one pound Spanish whiting, one pound clean white glue, well soaked, and carefully dissolved by stirring. Add five gallons of hot water to the mixture. Now give the mixture a thorough stirring, keep covered from dust, and let it stand for five days. Heat on a portable furnace, and keep hot while using. A pint of this mixture will cover a square yard of surface. While it is very much cheaper than oil paint, is is just as suitable for either stone, brick or wood. You can use any coloring material to give a desired shade, always avoiding green. The above formula makes a large quantity of whitewash of excellent covering and sticking qualities.

WALL SIZE.

To make wall paper adhere it is necessary to cover the surface to be papered with a strong *size*. Add ten ounces of glue, dissolved, to a large bucket of hot water. Use a common whitewash brush, and see that every bit of wall is covered with the size. The

top and bottom particularly require attention. It is well to let the size get nearly or quite dry before applying the paper.

PAPER HANGING PASTE.

Half a pound of flour will make sufficient paste for each roll of paper. Beat it, as if for a batter pudding, with clean water. Then pour boiling water into the batter, keeping it stirred briskly all the while. Use a little less than a gallon of water to each half pound of flour. The batter will swell, and turn to a yellow tint. Then stop pouring in water. It is then ready for use. It is well to make enough paste to paper at least one room. A little alum is generally put in the paste while boiling.

TO HANG PAPER.

If the walls to be papered are old ones it is necessary to have them thoroughly scoured. Every bit of old paper, whitewash, and rough paint must be scraped off, all holes and cracks carefully stopped with plaster of Paris, and given plenty of time to dry. The sizing should then be applied. The blank stripe from the left side of the paper must be cut off with a pair of sharp scissors, the remaining blank

stripe forming the lap. With heavy flock paper, however, both blank edges must be removed, as the paper is to be put on the wall without over-lapping. Having cut the paper the required length, lay it face down on the board, and evenly put on the paste with a paste brush or an ordinary whitewash brush. Work briskly but carefully, spreading the paste as uniformly as possible. Place it in position at the top of the wall, pressing it softly but firmly against the same. Use a cloth slightly damp to press it with, and so keep on until the bottom is reached. As you proceed down see that the figures are exactly matched. Cut off the strips even at the bottom, the strips being left a little long. To complete the work it is only necessary to cut off, and paste on the border.

GRAINING.

The faculty of imitating woods and marbles is of a very high order. It requires an excellent eye, a steady hand, and a closeness of observation possessed by few, and those who attain anything like a mastery of the art, deservedly receive very high remuneration. We will describe the methods to be pursued, merely remarking that the variations of the natural articles should be carefully studied, and although there are thousands of variations in the figures and colors of one tree, yet there is an underlying principle,

as it were; a harmony in the most fantastic shapes and shades.

It is preferable for an amateur to begin graining in distemper, in preference to oil, as if the first efforts should not be satisfactory the color can be washed off and another trial be made with better chances of success. Two coats at least of paint, mixed as for inside painting, should be applied for the groundwork of any graining; prior to the second coat, all nail holes and defective places, cracks, etc., should be thoroughly puttied up; the successive coats being allowed to dry thoroughly, the surface is then ready for the graining. Oak graining can be made light, medium, or dark, as may be desired; the proper groundwork for light oak being a buff color, made with white lead paint mixed with yellow ochre. For a medium shade, add a little Venetian red, and for dark oak, a still stronger mixture of the Venetian red, adding a little burnt umber and orange chrome. The work is then ready for graining. The proper mixture for oak graining in distemper consists of raw umber, yellow ochre, and burnt sienna (these can be dry colors, but those ground in distemper are preferable), about equal parts of each; mix with ale, sour beer, or vinegar, and a little sugar; taking care not to have the mixture too thick. Apply with a soft bristle brush or sponge, to a small portion of the work at once, only, for the reason that the graining must be done before the distemper dries; the grain is then imitated by combing the moist surface with a grainer's

comb. This can be had at the paint stores; or a tolerable one may be made by taking a stiff fine grained piece of harness leather, about four inches square, and notching the edge like the teeth of an ordinary hand-saw. Each edge can be cut of a different degree of fineness, by which the graining can be made coarse or fine, as may be desired. The combs sold at the stores are made of gutta percha, and are better because they do not absorb the moist color and thereby become softened like the leather. Steel graining combs of various degrees of fineness are also used by professional grainers, and are desirable to enable you to do nice work. The application of the fine steel comb, if used, should follow immediately upon the other. The comb should not be drawn in a perfectly straight line from end to end of the work, but should go in a serpentine direction in imitation of the grain of wood. A heavy grain can be imitated with a bit of rag or buckskin over the end of the finger, wiping out the color in spots, in imitation of knots, etc. Finish by gently drawing a long, soft bristle brush over the entire surface of the work with a light, irregular motion, to tone down the roughness and irregularity of the work, and if these directions have been intelligently followed you will have succeeded in making a very respectable looking job.

Professional grainers have a process of finishing, called over-graining, which need not be included in an amateur's first efforts. It is done as follows: When the previous process has become dry, the surface

should be lightly brushed over with a light solution of fuller's earth dissolved in water; then with a soft bristle brush apply very gently a mixture of sour beer, Vandyke brown, and a very little drop-black. A very small quantity of these colors is required, and a shallow dish is best for mixing them in. Care should be taken not to apply too much coloring matter and thereby destroy the effect of the previous work. Finish with a soft finishing brush made of badger hair, softening the effect of the previous application.

Graining in distemper requires to be varnished, as the materials of which it is composed are less permanent in their nature then the materials used in oil graining. The proper mixture for oak graining in oil, is two parts linseed oil, one part turpentine; melt a small piece of beeswax in the oil to prevent the mixture from running. Add a little burnt umber or Vandyke brown; if a rich oak is desired add a little burnt sienna. See that these ingredients are thoroughly mixed, then add a little drying material, either sugar of lead, litharge, or patent dryer; stir it thoroughly, and strain through a piece of fine muslin. It is then ready for application, as before directed; taking care not to apply too much of the mixture and thereby make a coarse, dirty looking job.

IMITATION OF MAPLE.

Proper ground work is a light cream color, and the ordinary maple is not very difficult to imitate. Graining mixture for distemper graining, Vandyke

brown and a little raw sienna, mixed with sour beer. Apply the mixture carefully with a brush or sponge, and rub down with a soft brush of badger hair to get the surface as uniform as possible. Wipe out portions of the color with a piece of wash leather or a soft cloth, in imitation of the curls which appear in the genuine wood, after which touch over the surface again with the badger hair brush, blending the lighter and darker portions of the work carefully. Imitation of birdseye maple is made in the same way, except that the portions of color wiped out should be done more carefully, and with a damp sponge, the eyes being made by dipping the tips of the fingers in a thin solution of the graining mixture, and gently touching the light spots with the finger tips

IMITATION OF MAHOGANY.

Ground work, red lead, adding a little Venetian red, and chrome yellow. Graining mixture, Vandyke brown, and burnt sienna, mixed with sour beer. Apply coating with brush or sponge, wiping out with leather or cloth as in graining maple; tone down edges, where color is wiped out, with badger hair softener; dapple the surface gently by striking it with the ends of the badger brush, so as to imitate the pores of the wood; put in the deeper tints of veins, knots, etc., with a fresh application of the graining mixture after the general surface has become dry.

Mahogany is not imitated as successfully in oil as in distemper. Colors for oil mixture same as for distemper, other ingredients same as for oak in oil.

IMITATION OF ROSEWOOD.

Ground work, Indian red, lightened with a small quantity of English or American vermilion.

Graining color, burnt umber, shading up and finishing with lake, and drop-black.

Rosewood can also be successfully imitated on a black ground, using a mixture of rose pink and asphaltum for a graining color, finishing touches being carmine, applied with a camel's hair pencil.

The foregoing embrace all the woods which are in ordinary use, and the same general principles are applicable to varieties not here enumerated.

As a rule the groundwork should be of the same color as the lightest tints in the wood to be imitated, and the grain laid on in transparent colors, generally in distemper, and treated with the comb, the brush, the softener, or brush of badger hair, and the necessary pencilling with a small camel's-hair pencil to produce the effects of knots, veins, etc. It is hardly necessary to say that in graining, as in other employments, it is "practice," with careful attention to details, and close observance of the natural woods, "*which makes perfect.*"

STAINING WOODS.

Some of the common varieties of wood used for building purposes, such as pine, and whitewood or poplar may be successfully stained in imitation of the finer woods, and after the desired color is produced may be very beautifully and durably finished by rubbing down the stained surfaces with linseed oil, and then giving the work a light coat of shellac varnish or any of the wood-fillers now well known to the trade.

It is proper to say here, that all surfaces to be stained should be thoroughly cleaned and sand-papered, so as to efface all strokes of the plane or other tools, and all dents or inequalities in the wood. Staining is rendered more effective by sponging the surface to be stained with a thin mixture of size and water, immediately after which the stain can be applied with a fine brush or sponge. The following mixtures will be found to produce excellent results:

MAHOGANY.

One part, nitric acid, diluted with ten parts of water. Apply with sponge tied on a stick, being careful not to let the acid come in contact with the fingers or clothes.

Another recipe is, one pound of logwood, and a double handful of walnut bark, boiled in a gallon of water.

BLACK WALNUT.

Asphaltum varnish, thinned with spirits of turpen-

tine. The color can be varied by adding turpentine, so as to produce a very light tint if desired.

Another formula is, half a pound of dry Vandyke brown, a quarter of a pound of sal soda, and one ounce bi-chromate of potash, boiled in half a gallon of water.

CHERRY.

Venetian red, or Indian red, with vinegar or sour beer, adding a little glue water.

YELLOW.

Powdered aloes, or gamboge, mixed as above.

Stained wood of every kind must be varnished or oiled, after staining.

IMITATION OF MARBLE, AND OTHER STONES.

ITALIAN.

Use black for ground, grain with gold tint for brightest veins, while the other veining can be done with burnt sienna, yellow ochre, oil and turpentine.

VERD ANTIQUE.

Black ground, grain with white, green, and yellow ochre.

SIENNA.

Ground, raw sienna, and white; grain with raw sienna, raw umber, white and black; cloud over with faint buff tint, in slightly defined spots, with a sponge.

Vein with raw umber for dark, and raw sienna and black, mixed to a green hue, for light.

GRAY AND WHITE.

White or lead color should be the foundation, the veins slate color and black, worked into the wet paints, with a small camel's-hair pencil.

GRANITE.

The first color should be light drab. Take a brush dipped in thick white paint, and spatter the ground, by striking the brush againt a stick held in the left hand. When pretty well spattered with little white spots, do the same with the black paints.

BROWN, ALBERT, CAEN, AND ANY OTHER STONE,

Can be imitated by covering the work well over with clear oil color of the tint wished for, and then sifting it well with clean white sea sand.

Where an imitation of any kind of stone is to be exposed to the weather it should be painted in oil; for indoor work distemper will answer quite well. The artists *scumble* (or partially blend) the veins, etc., in marble, to give them a natural appearance.

The amateur should not attempt this kind of work until he has carefully watched good grainers at work, as very much depends upon the peculiar manipulations of the tools.

SMALTS AND SMALTING.

Smalts are really some glittering particles of sand, or, more generally, ground glass. Blue smalt is pulverized glass of that color. There are only brown, red, black, and green besides. The smalts should be kept in the dark as much as possible, as they are given to fading. Smalts are principally used for the back ground of signs. The way of using them is to paint the board twice with lead-colored or white paint. Roughly outline the letters and gild them. Mix a stiff oil color the same tint as the smalts to be used. Then with a fine pencil paint the whole surface of the sign outside of the letters. The smalts must then be sifted through a fine sieve upon the fresh paint. Leave the sign lying on its back until it is dry enough to retain the smalts when it is raised on its edge. The loose particles may then be lightly brushed off.

FLOCK OR FLOCKINGS,

As it is variously called, is a fine powder, composed of the shearings of variously colored woolen cloths. It is much used, particularly for indoor work. It costs about a dollar a pound, and can easily be obtained of almost any color. It is used in the same manner as smalts.

GOLD LEAF AND GILDING.

Gold leaf, as the reader is probably aware, is brought to its mavellous thinness by repeated blows from the workman's hammer. It is a work requiring much practice and a good deal of intelligence. So thin is it, that the uninitiated find it almost impossible to remove a leaf less than three inches square, from the book in which it is sold, to the surface intended to be covered. The best way for the novice to commence, is to get a sheet of tissue paper, rub one side with a piece of white wax, placing paper on smooth board till it is evenly covered. The paper must be one-quarter of an inch larger than leaf of gold. Lay waxed paper on sheet of gold leaf and the leaf will adhere sufficiently to admit of its removal to the surface to be gilded. The tissue paper can be reused until the book of 25 leaves is all used.

The surface intended to be gilded having been thoroughly smoothed of all inequalities, by sand papering, etc., is covered with a thin coating of gold size, upon which, when dry, the gold leaf is applied; this size requires from six to ten hours time to become sufficiently dry, and the surface is then ready to receive the gold leaf. Gently remove the tissue paper to which the gold leaf adheres and place it (the gold side down) upon the surface to be gilded—pressing it down with a ball or roll of soft cotton, after which carefully remove the waxed tissue paper.

If any pieces do not adhere to the size, take them

from tissue paper, and put them on any spot that is bare. No joint will be apparent. To apply the leaf direct, you had better witness the operation by a skilled workman, as seeing it done once will give you a better idea than ever so long a description. The way to prevent gold leaf from sticking to any part of the work not prepared with size is to make a little thin muslin bag filled with common whiting and gently strike it over the place where you do not wish the gold to adhere; this leaves a slightly powdered surface, to which the gold leaf will not stick. Be certain that the *size* on the part intended to hold the gold is just right to make it adhere. Clear water will remove all superfluous matters, and chamois skin will dry and smooth the surface.

Silver leaf and Dutch metal can be more easily applied, as neither of them are nearly as thin as *gold* leaf.

PAINTING TRANSPARENT WINDOW SHADES.

First get a light frame the size that you need, then stretch the muslin evenly about it, tacking the edges. You then need a fine paste, made of flour, a little bit of white soap, and a small quantity of white glue, dissolved. Spread a coat of this evenly and thinly over the muslin. Let it dry. Next apply a coating of good linseed oil, thinned with turpentine, to the whole surface or any part you desire. You may use

any of the colors that are transparent. You next, with a fine pencil, draw an accurate outline of your intended picture, with umber or black. Then paint on the colors, bearing in mind that the more they are thinned the more transparent is the effect produced. First put on your bright colors, following with the dark ones. Apply your paint very evenly with soft brushes. If by mistake you lay the color on too thick, at once scrape off the superfluous portion. Magic lantern slides may be painted in a like way.

PEARL ORNAMENTATION.

This work, when cleverly done, has an exceedingly rich and elegant appearance. It looks particularly well on any dark polished wood. It is much used for work boxes, tops of tables, chess-boards, etc. Spread a thick coat of black Japan over the work, have ready some flakes of pearl of the desired shapes and thickness, which you must carefully lay on the painted surface. See that they are all evenly pressed down to a perfect level with the surface. You can then exercise your fancy in painting flowers and foliage in colors, the pearl being used for the principal part of the flowers and leaf.

FROSTING.

Extra thin glass, crumbled to dust, imparts a very brilliant, sparkling look to smalted surfaces.

BRONZING.

Gold, silver, and copper bronze powders, are applied by sizing over the surface to be covered, with gold size, and dusting the bronze on, from a bag made of thinnest muslin, or applying it with a soft brush. Very pretty effects of verde-antique can be produced with a little dry green, applied over the bronze, in the same manner.

DECALCOMANIE.

This art is a kind of transferring. The pictures used are made for the purpose. The cementing varnish, the kind to use, can be bought at the stores in which the pictures are sold. The face of the picture is entirely covered over with varnish. Then put it upon the place intended for it. Let it be pressed, without any force, upon the work. After damping the paper, begin to remove it, by gently lifting a corner; then slowly raise the whole paper from the surface. The picture will be left perfect. To remove the excess of varnish use a little brush with a detergent solvent, sold in the stores. By this all superfluous varnish is easily removed, while neither the picture nor the varnish under it is at all injured. A great many articles are decorated in this manner; such as china ware, glass vases, and fancy boxes. Many of the fine pictures on omnibuses and carriages

are done in the same way. Some decalcomanie pictures are covered at back with gold leaf: they are the best.

HOW TO STENCIL.

Stencilling is not only a labor-saving means of reproducing a number of similar figures, but it has the additional advantage of reproducing such figures *exactly* correct. This is a very important matter, as in a case of running a border round a room, etc., in distemper painting. You first need a piece of well sized fools cap paper. (The sizing is to prevent the color you use from penetrating and spoiling your model.) You also need a lead pencil, and a sharp-pointed knife. In folding the paper let the edge of the fold be the pattern's centre. Draw any pattern you please on the paper; being careful to leave small links, as it were, uncut, to hold the piece all together. Place the paper upon smooth glass, and with the knife's point cut out the figure. You can get patterns at color shops; but they are so exceedingly plentiful in illustrated works that you can easily find all you want. These stencil patterns are very handsome if carefully done for curtains, floors, oil-cloths, borders to painted walls, etc. If you wish to stencil in more than one color, lay the *whole figure* stencil on a second paper; mark it carefully around, then remove the parts that you desire to appear in one color; but

leave the rest uncut. Next, with a brush put all the figure again on a fresh sheet, together with the partly cut stencil over that; remove all but the parts covered by the last stencilling. You will now possess two stencils; these, when placed on the work, one over the other, will, of course, form the whole figure. In like manner you can go on continuing to multiply them. Where it is desired to imitate the effect of ground glass, another plan is adopted, almost the opposite of the foregoing method. The figure to be drawn and cut out of the paper. The figure, and not the space that it was cut from, is to be retained. Take gum and make the paper adhere to the glass, seeing that every part is smoothly laid down. Take a stencil brush well filled with white paint, and pounce with the end of the brush all over the glass. Place a knife under the paper as soon as you find the paper is dry, and the figure will be found defined sharply on the glass. To make a sort of rule border, draw a stick through the white paint along a ruler.

HOW TO PAINT FARM WAGONS.

Every part of the wagon must first be entirely cleared of any and every particle of dirt, grease, etc. All lumps and bruises should be filed down and sandpapered smoothly. Having taken the wagon under shelter, proceed to elevate the wheels clear of the floor, by supporting the axles on boxes or saw

benches. Before proceeding to paint, carefully dust the wagon. Though durability is the first point, it does not necessarily exclude beauty of appearance, and the painter can display a good deal of taste in selecting his colors. While any of the decided primitive colors would be best suited for the body, the under parts and wheels had better be painted with a mixed color, having white lead for its principal part. Having made choice of your color, if it is a dry color only, or a color you intend mixing with white lead, add of boiled oil, two parts, carriage rubbing varnish, one part, and a little turpentine. If you use the colors already mixed with oil, put up in tin boxes, very little additional oil will be needed. A small quantity of brown Japan will aid it to dry. Commence your job by painting the body, putting on the paint thickly and evenly, with a flat bristle brush. Proceed with the under parts next, leaving the wheels until the last thing. Use a round brush of good size for this part of the work. You can do nothing more until the work is entirely dry. If there are any deep bruises, cracks, etc., fill with putty, colored to resemble closely as possible the hue of the paint you have been using. It is well to have either white or red lead one of the ingredients in this putty to give it hardness. After every grain of dust is removed, put on the second coat. Allow it to thoroughly dry and harden. Should the paint, after drying, have a shiny look, rub it well with a handful of moss or curled hair. This is to prevent the

varnish from failing to stick in every part. STRIPING is by far the most difficult part of wagon painting. It is only to be acquired by closely observing a good painter while he is at work, and by constant practice on a wheel, till the necessary dexterity is acquired. Any other ornamental work than striping can be put on the wagon by either of the means of stencilling, decalcomanie, or transfer work, descriptions of which are given elsewhere. Common carriage varnish will serve for finishing this work. For a little over a dollar you can buy enough to varnish all parts. Before beginning to varnish, have the paint thoroughly dry. The varnishing brush should be used as in painting, being careful, while giving a generous coating, that the varnish shall be laid on level at once, so that no heavy "runs" will appear, to mar the smoothness of the surface.

RE-VARNISHING A CARRIAGE.

First have the carriage scrupulously clean in every part. In a dish put some finely powdered pumice stone; dampen it well with clear water; put some of this on a clean soft woolen cloth; let every part of the carriage be carefully rubbed with this until the surface is smooth and clean. Do not let the pumice dust remain on the surface, but the moment you get through with a certain portion wash it off clean, for it has a tendency to stick. After the entire surface has been thus thoroughly "rub-stuffed," as it is called, allow it to get thoroughly dry, and then apply the varnish.

ABOUT MATERIALS.

We will now proceed to give a description of the different articles needed by the painter in the execution of his work, with some practical remarks about the proper way to use them and care for them after using them. The first thing to be done is the grinding or mixing of colors. For this purpose the grind-stone and the muller are needed. The grind-stone generally used is found to be of most convenient size, if some eighteen inches square; if larger than that too much color is spread over the surface; while if materially smaller, enough color cannot be mixed at one time to do a reasonable amount of coloring. The stone should be in a horizontal position, and weighty enough to remain unmoved during the process of grinding the paint on it. Fine grained black or white marble is the best kind of stone to get. The smoother the better; for any inequalities in its surface will catch and retain some of the colors, and occasion a great deal of trouble in the cleaning, as if any remains, it will become mixed with the next paint and discolor it. A slab of slate stone is much cheaper, but is a very poor substitute for marble. A large flinty stone, of the shape and about twice the size of an ostrich's egg, is used as a muller. The thick end is broken off for about two inches, and the fractured part ground to a smooth face. The muller can be bought ready for use at the color stores. In the process of grinding, the paint becomes spread

about the face of the stone, which is in a horizontal position, and has to be quite often gathered together in the centre, when a fresh departure is taken, which results in the paint being again spread over the stone. To clear up this paint the best article is found to be a slender, not narrow, knife of horn. This material being flexible. A finely tempered steel knife or spatula is sometimes used; but it has the disadvantage of injuring the pure hues of some of the colors, especially such as are either entirely or partially composed of arsenic. Plating the spatula with nickel is said to overcome this objection.

PENCILS AND BRUSHES.

In no business is it more necessary to use care in the selection of the "tools" to be purchased, than in the painter's. All the masterful delicacy of touch acquired by practice and observation may be defeated by a pencil too soft or too hard. Brushes are of different sizes, and are made some round, others flat, according to the kind of work for which they are to be used. The usual size of brushes runs from quarter of an inch to three inches in diameter. Though for some special work they are made still larger. The first coat, usually called the "priming" by the trade, requires the larger sizes, as the object is to cover as much surface as possible in the shortest time. The

smaller kinds are used for painting in corners, and close to edges where the larger ones would be difficult to manage. The flat brushes are used in graining; but more generally for varnishing. The material generally used for brushes is hog's bristles. But the fine hairs of goats, badgers, and other animals, are often used for brushes of uncommon excellence. The hairs themselves should be tried to see that they are individually strong; they should be of even length, smooth, elastic, and packed firmly together, and the threads that bind them should be strong and tightly bound. Care should be taken to see that the bristles are genuine, as many brushes are made of the fibre of whalebone, sisal, and other similar fibres, only the outside being of genuine bristles. These spurious brushes might readily deceive the unwary, but close examination will detect them. They never do satisfactory work. Another way of cheapening a brush of good materials is to put too scant a supply of bristles on the handle; this renders the brush stringy, and too weak to spread the paint properly. Another fault common to inferior brushes, is that the bristles are not fast in the stocks. When this is the case it is very annoying, as loose hairs will come out in the paint while you are at work, and the finished painting will be much marred by showing ridges formed by hairs embedded in the paint. If after a while a really good brush begins to lose hairs, drive some small wooden wedges inside the thread that binds them, and for quite a while they

will be as good as new. "Pencils" is the name given to the nicer and more delicate kinds of brushes. They are the sort used by landscape and figure painters, and are fabricated from the most delicate and perfect hairs. Pencils are always made round, and are at times fitted in quills, but generally in wooden handles, like the ordinary brush. Brushes should not be left to stand for any length of time in a pot of paint. If they are not to be used for some hours, suspend them in cold water so that the water may come nearly up to the binding. After your work is finished clean your brushes thoroughly by rinsing in spirits of turpentine, and rubbing on a piece of board, and then washing thoroughly with soap suds.

NECESSITY OF PERFECT CLEANLINESS.

One of the first and foremost rules to be observed about painting and varnishing is cleanliness. The work and the implements must be kept absolutely clear of dust and dirt of any and every kind if you want to have good results for your time and labor. All surfaces to which gilding, color, or varnish is to be applied must first be scrupulously cleaned. Not a grain of dust of any kind should be allowed to remain, for it will disfigure the very best work. When a place which is to be varnished is found to be crusted with dust or other dirt, it must be washed

with soap and water, for which purpose use a sponge. After each application of the sponge it should be rinsed and the dirty water pressed out. Be certain that the surface is dry before touching your brush to it.

The paint stone should always be carefully cleaned, immediately after using it for grinding colors, by first scraping the color off as much as possible with a spatula, then with a rag and a little spirits of turpentine wash off the face of the stone and wipe dry with a cloth, treating the muller in the same manner.

Brushes and pencils should be also carefully cleaned when you have finished using them, and put away for future use; never allow them to stand for any length of time in the paint, as the parts exposed to the air speedily dry and harden and the brush becomes useless. To cleanse them thoroughly, first brush out all the color possible by brushing a bit of rough board, occasionally dipping the brush in spirits of turpentine, then rinse the brush with turpentine and finally wash clean with soap and warm water. Varnish brushes are an exception to the foregoing rules. The best way to preserve them in proper order for use, is to immerse them in varnish as far as the binding of the brush, keeping the vessel in which they are put carefully covered to prevent dust and evaporation of the varnish; a long, narrow jar is best for this purpose, as it keeps the brush upright and but little varnish is required to produce the requisite

depth for the immersion of the brush, and the top can be carefully corked or covered. If the brushes must necessarily be cleaned, it should be done with spirits of turpentine or alcohol, avoiding the use of water. Varnish brushes should never be suspended in water, like paint brushes.

MOLL-STICK.

Painters use a moll, or maul-stick on which to gently rest the right hand, when they are executing some particularly nice work. This is made of any strong, light wood, and at one extremity it has a small puff of wool or other soft substance, covered with kid, which is allowed to rest lightly on the surface, while the left hand holds the other end.

SPATULAS

Are a kind of thin, flexible knife, used to gather colors together or to mix them. The spatulas are made of different materials. The flexible steel ones being the handiest and most commonly used; they are only objectionable when used on some of the mineral colors, as has been before mentioned.

WHAT COLORS SHOULD GO TOGETHER.

There are few people but must have observed that many colors, when brought together, have the effect of setting each other off, while other colors actually *jar* upon the sight, when side by side. This subject is worthy of study and comparison.

Gold, sets off well either black or brown.

Greens, blacks and whites.

White, any color.

Blues, whites or yellows.

Reds look well with either yellows, blacks or whites.

In some cases durability has to be sacrificed to appearance; as in interior work. While in outside work the reverse is the rule. Some of the most beautiful paints fade and look dingy when exposed to intense heat and heavy rain, as the purest marble of Carrara looks even worse than ordinary white marble after facing extremes of weather for any length of time.

PRACTICAL HINTS.

Handling the brush appears a very simple matter; but in reality it requires a good deal of practice before the necessary skill is attained. To touch light or heavy, to guide the stroke close to a certain edge without going a hair's breadth beyond a certain line; to put the paint on equally thick or thin all over a

large surface; to avoid spattering spots around, disfiguring if not ruining other parts of the room; all these are points requiring, as we have said, close attention and a good deal of practice. As in every other art, so in painting, "the greatest art is to conceal art." An observer should never be able to trace the strokes of the brush upon the face of the work. The fine work needed in panelling of doors, wainscoting, etc., will make it requisite for you to use small pencils or brushes, and to apply them, your best way is to have the colors you need put upon a palette, as it is inconvenient to be dipping into a can or pot every time you wish to use a little mite of color. One advantage of using a palette is that every time you take color you can manipulate your pencil so that it is brought to a fine point, and thus be enabled to make fine lines; which you obviously could not do if you were forced to dip your pencil into a pot every time that you wished a fresh supply. When buying sable and camel's hair pencils the best way to try if they are good, is to wet them in a glass of clean water, and draw with them on a bit of paper. If they always come to a fine point, they are the ones you want; if not, they would be dear as a gift. A *cheap* or low-priced brush of any kind is, as a rule, a poor investment, unless for a short job of coarse work which would injure a better brush; after such use the cheap brush is generally fit to throw away.

Nearly all the paints which the painter has occasion to use for nice work, either inside or outside, particu-

larly those made of a combination of colors, are improved by straining; this removes all lumps, and has a tendency to thoroughly mix and blend the colors. Strainers may be had from any dealer in paints, or a simple one may be made by knocking the bottom from an old tin fruit can of about one quart capacity, and tying a piece of thin muslin or fine embroidery canvas over the end, and running the paint through that. All refuse obtained in this way, and all scrapings of color, etc., obtained in cleaning pots and paint stones, should be thrown into a vessel kept for the purpose. Such accumulations, boiled up in oil, are again available for use. A most excellent cement for stopping leaks around chimneys, etc., is made by adding a little fine sand to these boiled paint skins and applying while hot. Never apply too *heavy* a coat of paint to anything, or attempt to make two coats do the work of three; there is no real saving of time or material by so doing, and the work, when done, will not look as well or last as long as if done in a proper manner.

USEFUL HINTS AND RECIPES.

POLISH FOR HARD WOODS.

Take of spirits of turpentine, one gill, shave into it three ounces of white wax, let this mixture stand for twenty-four hours; then dissolve one and a half ounces of castile soap in a gill, or a little more, of boiling water; when this is thoroughly dissolved, add

the mixture of wax and turpentine, stirring all together while hot; when cool it is fit for use. It is applied by rubbing on with a cloth, and this should be done very thoroughly. An excellent rubber or polisher is made by taking a long narrow strip of cloth and rolling it as firmly as possible into a solid roll, and then securing it to a circular back of the same material. Woolen cloth is much the best for this purpose, and the strips should be torn, not cut, off.

FOR DRYING DAMP CELLAR WALLS.

Two quarts of tar, and two ounces of grease should be boiled together, in an iron vessel, for about twenty minutes. Have ready two pounds of slack lime, and one of pounded glass, which have been thoroughly dried in an iron pot. Having previously sifted this through a flour sieve. To the tar and glass add some of the lime so as to form a thin paste only sufficient to cover a square foot at a time about an eighth of an inch in thickness.

FOR MAKING FLEXIBLE PAINT.

Two and a half to three pounds of good yellow soap, dissolved in one and a half gallons boiling water; grind this solution, while hot, with twenty-five pounds of oil paint of the desired color. Used for painting canvas and cloth.

FOR MAKING SHELLAC POLISH.

Dissolve a quarter of a pound of shellac gum in one pint of alcohol, keep well corked, shaking occasion-

ally till completely dissolved. Apply with a cloth or with the polishing rubber, before described.

TO WHITEN LINSEED OIL.

Add together one gallon linseed oil, eight ounces spirits of turpentine, and two ounces of litharge. For fifteen successive days shake it up daily. For three days after let it settle. Pour the clear part off into a large pan; let it stand in the sunshine for three days, when it will be perfectly clear and white.

TO REMOVE PAINT FROM CLOTHING.

Exactly equal parts of spirits of ammonia and turpentine will entirely remove paint spots from any description of clothing; be the same dried ever so hard. Let the painted part be thoroughly soaked with the mixture, until the paint is quite soft. Wash clean with soap-suds.

TO MAKE CLOTH WATER-PROOF.

Take equal parts of lampblack and yellow ochre, well mixed, and then add as much strong, hot ley as will equal the two in bulk. Lay it on thick as possible, and rub down smoothly; allow to dry for forty-eight hours or more, and finish with a coat of quick-drying oil paint, of any desired color.

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